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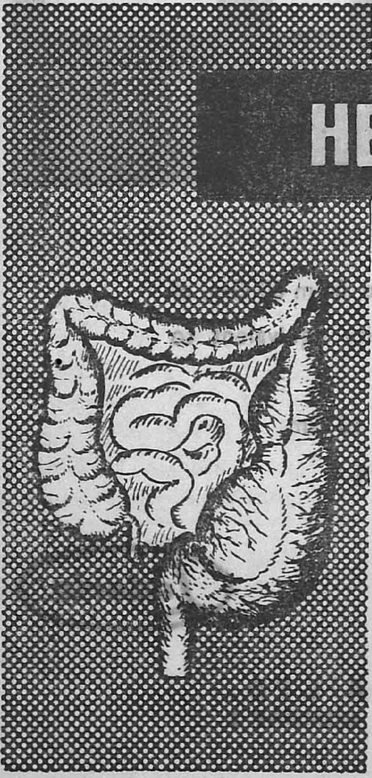

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The Madras Clinical Journal

JOURNAL OF THE MADRAS STATE BRANCH OF THE INDIAN MEDICAL ASSOCIATION
(WITH WHICH IS INCORPORATED THE "MISCELLANY")

Vol. XXVIII June 1962 No. 12

LUNG CANCER *

K. V. THIRUVENGADAM, B. SC., M. D.,
Professor of Clinical Medicine and Physician, Stanley Medical College and Hospital.

INTRODUCTION:

The recent years have witnessed a significant increase in the incidence of lung cancer. The increase in the incidence of this disease is real and not merely apparent as will be discussed subsequently. Ultimately, "Lung Cancer" originates from the basal cell layer of the bronchus and would be properly called bronchial or bronchogenic carcinoma.

Bronchogenic carcinoma is now the most frequent cancer and supercedes carcinoma of the breast in the frequency of its incidence. Since 1920, there has been a six fold increase in its incidence. Eight per cent of all cancers arise in the lungs and thirteen per cent of cancer deaths are due to lesions arising in the lungs.

In countries where proper statistical evaluation of the incidence of diseases is possible, this disease has been shown to have registered a significant increase in its incidence. For instance, in one American series, (Massachusetts) the incidence of this disease was 3·08 per hundred thousand of the population in 1930 and 42·16 per hundred thousand of the population in 1955. During the same period, breast cancer increased only to 36 from 29 per hundred thousand of women. In another series, during the period 1931–1950, carcinoma of the bronchus has increased by 385 per cent in men and 16 per cent in women; during this period, all other cancers increased by only 2 per cent in men and decreased by 15 per cent in women. The number of deaths due to carcinoma of the bronchus in 1930 in the United States was 2500. In 1950 it was 18,000, and in 1956—29,000. Reports from practically every country in the west show an increase in the incidence of the carcinoma of the bronchus. In England the disease has increased 38 fold in men from 1920 to 1956, and in 1953 ten per cent of all male deaths between 45 and 55 years was due to lung cancer.

* Based on a lecture delivered before the Thanjavur branch of I. M A. on 15th October 1961.

I am indebted to Dr. R. Viswanathan, Director, Patel Chest Institute of Delhi for the following figures regarding the incidence of the disease in India among hospital patients :

The number of cases of lung cancer per million patients of all diseases in 1950 was 26·5 and in 1959, 68·4—the number of cases of lung cancer per thousand cases of cancer at all sites was 16·9 in 1950, 26·9 in 1959, the difference between the two being statistically significant.

It might be said that the increase in the incidence of the disease is because of the increase in life expectancy in recent years, so that more people reach the cancer age. For example, the life expectancy in U. S. A. in 1850 was 40, in 1900—48, and in 1952—68 years. It can also be said that the disease has registered an increase only because of the greater awareness of its occurrence in the population and because of better diagnostic facilities.

However, that the increase in the incidence of the disease is not merely apparent but is real is shown by the following facts :

(1) No other neoplasm has registered a similar increase ;

(2) The increase has been marked for males ;

(3) The increase has been for particular types of lung cancer for epidermoid and anaplastic carcinoma ;

(4) In countries where autopsies are made more or less routinely in institutions, the disease has registered an increase at autopsy ; for example, in the American Veterans' Bureau Hospitals the autopsy incidence of bronchogenic carcinoma was 6·4 per cent of all cancers in 1927–31, 15·8 per cent in 1932–37, and 23·4 per cent for the year 1957.

Having realised that there has been a real increase in the incidence of bronchogenic carcinoma, the next question one faces is the explanation for the increase. Environmental factors have been incriminated among the causes for this. Tarring of roads and exhaust fumes of petrol and diesel engines might contribute to the occurrence of compounds containing carcinogens like methylcholandrine, 3–4 Benzpyrene, etc ; the occurrence of smog has also been suggested as a possible factor. A clear cut example of the influence of environmental factors in the occurrence of bronchial cancer is the so-called Schneeberg and Joachimsthal cancers among miners, which have been traced as due to Radon in the atmosphere of the mines in Germany and Czechoslovakia. It is also to be noted that in one study there was no death due to bronchogenic carcinoma in rural non-smokers; whereas urban non-smokers had a mortality of 14·7 per hundred thousand.

However, the casual relationship of environmental factors to the increasing incidence of bronchogenic carcinoma in recent years is not very convincing. In fact, the increase has been much greater in men than in women under the same atmospheric conditions. Again, there are examples of greater incidence of lung cancer in some places, without atmospheric factors like smog, than in other places in the same country where smog is an important problem. For instance in U. S. A., the incidence of the disease in New Orleans is greater than in Pittsburg, though the later city is troubled by smog.

Perhaps the most striking observations are the increasing prevalence of smoking in most countries of the

world in the past two or three decades and the association between chronic heavy smoking and bronchogenic carcinoma.

In U. S. A., the number of cigarettes smoked per person has increased by 456 per cent in the past thirty three years. The annual per capita cigarette consumption in persons above fifteen years was 16 in 1880 and 3556 in 1953. More young people are smoking today than twenty five or thirty years ago. In one study by the American Cancer Society, in the age group 65 to 69, 21·6 per cent of those interviewed had never smoked, and only 20·3 per cent had smoked more than a pack a day, whereas in the age group of 13 to 15 years, 37 per cent were already smoking and in the 16 to 19 years group, 67 per cent smoked cigarettes.

The studies to investigate the casual relationship of cigarette smoking and cancer have been retrospective and prospective. In retrospective studies it has been found that of patients with bronchial carcinoma with a smoking history, 96·1 per cent had smoked for over 20 years; of all male patients with bronchogenic carcinoma, 94·1 per cent were cigarette smokers, while only 4 per cent were pipe smokers and 3·5 per cent cigar smokers, with an overlap of the type of smoking in a small proportion.

Another interesting retrospective study, that by the American Cancer Society has been that the men cancer deaths per hundred thousand of the population was 3·4 in non-smokers; 51·4 in those who smoked less than half a pack of cigarettes a day, 59·3 in those smoking half to one pack, 144 in those smoking between one to two packs per day, and 217 in those smoking more than 40 cigarettes per day. The increase in the incidence of lung cancer is also proportionate to the number of cigarettes smoked in women, but since women smokers have increased only recently the lung cancer incidence among women will rise only some years hence, because of the necessary lag-period for the development of the neoplasm due to prolonged smoking.

It has been found that bronchogenic carcinoma is 27 times more frequent in people smoking 2 packs or more a day than in non-smokers.

In prospective studies in which chronic heavy smokers were followed up for the development of lung cancer, it has been found that in those who smoke cigarettes regularly and heavily, the cancer death was 141.6 per hundred thousand of the population per year. Lung cancer death rate among those who never smoked was only 14 per hundred thousand per year. Cessation of smoking, if sufficiently prolonged, was associated with a diminution in the risk of the development of lung cancer. For example, among those who smoked more than a pack a day, lung cancer death per hundred thousand was 157.1 as they continued to smoke; 77.6 if they had stopped smoking within ten years; 60.5 if they had stopped smoking for more than ten years.

Tobacco tar has been proved to produce cancer at the site of application on the skin of experimental animals. Mice subjected to tobacco smoke over prolonged periods have been shown to have developed pathological changes in the bronchial tree, ranging from bronchits, with mild

proliferating epithelial changes, to squamous cell hyperplasia and even carcinoma in situ.

Bronchogenic carcinoma is four to five times commoner in the male than in the female. It is interesting to observe that even before smoking became a widespread habit, the incidence of the disease was lower in women than in men. However, one type of lung cancer, the adeno-carcinoma is found more often in women.

The most common age group for the occurrence of the disease is between 40 and 55 years, nearly 60 per cent occurring in this age group.

Pathology:

It is not proposed to discuss the details of the histological lesions of bronchogenic carcinoma. Bronchogenic carcinoma occurs more frequently in the upper lobes than in the lower lobes, lingula or middle lobe and is commoner on the right side. The principal histological types are the squamous cell, undifferentiated and adeno-carcinoma. A fourth type is the so-called alveolar carcinoma, which actually is bronchiolar in origin and extends into the alveoli. Depending upon its position in the tracheo-bronchial tree, bronchogenic carcinoma is divided into the hilar type, the pulmonary type, and the peripheral type. The hilar type, which constitutes about 60 per cent of all cases, is characterised by the lesion occurring in the main bronchi and may spread towards the trachea, or distally. There is initially thickening, roughening and granularity of the mucous membrane; subsquently the lesion may spread across the thickness of the wall, spread to the lymph-nodes, and produce effects of the pressure of the enlarged lymph-nodes on the various structures in the mediastinum-the so-called mediastinal syndrome. In the pulmonary type, which occurs in 25 per cent of cases, the lesion is situated in the peripheral branches of the bronchial tree and its origin from the bronchial system can be easily demonstrated. The lesion is often circumscribed and may undergo necrosis and cavitation, bleeding being a possibility.

In both the hilar and pulmonary types, obstruction to the bronchus may be initially partial, causing "emphysema" of the lobe or segment distally; later, collapse of the area of the lung may occur (Fig. 5, Case 3). Infection of the collapsed area leads to "pneumonitis", pleurisy, dry or wet, often purulent (empyema).

In the peripheral type, it is often difficult to demonstrate the bronchial origin of the lesion, and it is often "silent" till symptoms due to metastasis, neuropathy or arthropathy (Figs. 1 & 2, Case 1) occur.

The so-called alveolar carcinoma, produces death by local effects rather than by metastasis. It may take the form of multiple nodules or a diffuse form.

The pleura may be infiltrated by the malignant cells from the lesion in the lung and an effusion, usually haemorrhagic, but sometimes serofibrinous (Figs. 9 & 10, Cases 7, 8) may occur. However, a pleural effusion may also be the result of inflammation of the pleura overlying a collapsed lobe or segment, distal to an obstruction by the new growth.

Metastasis of lung cancer occurs by the blood stream and by the lymphatics. There may be a small primary carcinoma in the lung with

extensive blood-borne secondaries. Contrariwise, there may be a large primary in the lung without metastasis. In 90 per cent the spread is to regional lymph nodes and about 50 per cent to the bones, 40 per cent each to the adrenals and the liver, 20 per cent to the kidneys, and much smaller percentages to the heart, opposite lung, spleen, etc.

CLINICAL MANIFESTATIONS :

The clinical manifestations may be pulmonary or extra pulmonary. Those referable to the chest itself include cough which occurs in 20 to 40 per cent as the first symptom. It is due to the irritative effect of the new growth in the bronchus. However, cough may also be due to infection and inflammation distal to a new growth obstructing a bronchus. In chronic smokers, with the so-called smokers' cough, the cough assumes a new character as a result of the new growth. Haemoptysis which occurs in 35 per cent of cases and which is the first symptom in 17 per cent is due to ulceration of the bronchial mucosa at the site of the neoplasm. Breathlessness which is due to partial obstruction of a bronchus and is associated with unilateral wheeze may also be among the first symptoms. Pain in the chest which occurs in 20 to 30 per cent of cases at onset may be due to pleural involvement, or erosion of bones of the chest wall by the new growth, (Fig. 6, Case 4) or ulceration of the bronchi. Hoarseness of voice which is due to pressure on the left recurrent laryngeal nerve by enlarged lymph nodes secondary to a neoplasm in the left lung may be a complaint in 1·8 per cent of cases. Attacks of "pneumonitis" in the same lobe or segment which are really instances of infection of an area of collapse distal to the growth obstructing the bronchus may also occur.

Objectively, the physical signs may vary from absent signs at one extreme, signs of unilateral wheeze, of collapse (Fig. 5, Case 3) "pneumonia", pleurisy, dry or wet (Figs. 9 & 10, Cases 7 & 8) and of mediastinal space-occupying lesion (Fig. 7, Case 5). Though a peripherally placed carcinoma may cavitate (Figs. 3 & 4, Case 2) cavitation in association with bronchogenic carcinoma is more often a manifestation of suppuration and break down with abscess formation in an area of collapse of a lobe or segment. The mediastinal syndrome (Fig. 7, Case 5) deserves special mention because the presentation may be dramatic with obstruction to the venous return from the head and neck and the upper extremities, pressure on the phrenic and recurrent laryngeal nerves causing diaphragmatic paralysis and a hoarse voice respectively, pressure on the oesophagus and so on. The disability is dyspnoea associated often with stridor. In cases presenting with pleural effusion, examination of the pleural biopsy (Cases 7 & 8) may be of help in detecting the malignancy apart from procedures like bronchoscopy, etc. It has been found in one study that 52·5 per cent of patients with neoplastic disease have pleural effusion, and of these 41·5 per cent occurred in carcinoma of the lung.

The so-called Pancoast's syndrome (Fig. 10, Case 8) is only the result of occurrence of bronchogenic carcinoma in the apical regions of the upper lobe, spreading to the chest wall and to the neighbouring structures of the thoracic inlet. The manifestations include weakness of the hand muscles, pain in the region of the

shoulder and the inner aspect of the upper extremities due to brachial plexus involvement and Horner's syndrome.

The extra thoracic manifestations of bronchogenic carcinoma may be due to actual metastasis or due to certain remote effects of the carcinoma without there being actual metastasis in the regions to which the symptoms are referable. As already mentioned, metastasis occurs most frequently in the lymph nodes, bones, adrenals, liver, opposite lung, etc. in that order of frequency. As a consequence, lymphadenopathy, pathological fractures, hypo-adrenalism, jaundice, etc. may be the corresponding manifestations. The remote effects of carcinoma of the lung without actual metastasis are a fascinating study. In about 10 per cent of cases, the initial complaint may be pain in the joints. Digital clubbing and objective swelling and effusion in the joints may be observed in this condition, called hypertrophic osteo-arthropathy (Case 1, Figs. 1 & 2). It may be mistaken for diseases primarily of the joints like rheumatoid arthritis, osteoarthritis, etc. The marked oedema of the legs may be mistaken for the oedema of venous obstruction or lymphatic stasis, or congestive cardiac failure. The interesting feature of the hypertrophic osteo-arthropathy is that it disappears promptly with the removal of the pulmonary new growth and sometimes after mere thoracotomy, vagotomy, or hilar denervation. Very rarely spontaneous remission of the osteoarthropathy may occur, as in one of the cases presented.

Dermatomyositis and acanthosis nigricans are among other manifestations in the connective tissue systems and skin.

Rarely, metabolic abnormalities have been observed in association with bronchogenic carcinoma; for instance, hyper-calcaemia without actual bone metastasis has been reported in association with bronchogenic carcinoma.

Endocrine abnormalities like gynæcomastia and very rarely, Cushing's syndrome, characterised by obesity of the buffalo type, hypertension, diabetes, hirsuties, etc., and hypokalemic hypochloremic alkalosis have been reported. Cushing's syndrome has been found only with the undifferentiated type of bronchogenic carcinoma.

The occurrence of symptoms and signs referable to the nervous system without actual metastasis in the nervous system, so-called carcinomatous neuropathy, has been a fascinating problem. In some series, the actual incidence of carcinomatous neuropathy has been as high as 75 per cent. The manifestations include signs and symptoms of cerebellar disorder due to cortical cerebellar degeneration. The patient develops ataxia, nystagmus, dysarthria, intention tremor; vertigo, etc. Manifestations of peripheral "neuritis", sensory or mixed sensory and motor also occur. One case with sensorimotor neuropathy with asymptomatic upper lobe carcinoma has been seen in this study. Mental changes of dementia or toxic psychosis may occur. One such case has been encountered recently; a middle aged male with right upper lobe cancer and secondaries in the left femur had terminal psychotic symptoms without evidence of a space occupying intra-cranial lesion. Occasionally, muscular wasting, not secondary to neuritis, so-called proximal muscular syndrome consisting

of weakness and wasting of the proximal muscles of the limbs may be observed.

RADIOLOGY :

Some relevant radiological appearances in bronchogenic carcinoma may be mentioned. When the lesion presents as the spheroidal nodule, umbilication or a depression at one spot in its outline, so called Rigler's sign is suggestive. Where the new growth itself has undergone necrosis and cavitated, the shaggy irregular appearance of the wall is again suggestive. Where the lesion is an infiltrating tumour, the nodular beaded character of the infiltration is a useful characteristic. Erosion of the ribs overlying the shadow in the lung field is very suggestive. Enlargement of the hilum on the side of the lesion would suggest a spread to the hilar lymph nodes and may occur early in the disease. Segmental or lobar emphysema or collapse are indirect evidences of the obstruction produced by the new growth. Occasionally, mediastinal enlargement due to lymphadenopathy, a result of metastasis may be the presenting clinical and radiological manifestation. The primary in the bronchus may be minimal and may not be visualised in the plain x-ray. While laminography (tomography) will be useful for visualising proximal bronchial obstruction, bronchography will help in visualising peripheral bronchial obstruction. Elevation of the diaphragm with paradoxical movement visualised on fluoroscopy may be a consequence of phrenic nerve involvement by the new growth when it invades the mediastinum.

SPUTUM CYTOLOGY :

Examination of the sputum for malignant cells by special staining technique, for example Papanicoloau's stain, has been very useful in the hands of trained workers; as high as 84 percent positive results have been obtained in ultimately proved cases of bronchogenic carcinoma. The sputum sample in patients who have unproductive cough may be obtained after the patients have inhaled aerosolised solutions of saline and other suitable ingredients. Bronchial washings also form useful material for the search for malignant cells.

DIAGNOSIS OF BRONCHOGENIC CARCINOMA :

This is possible by a combination of clinical methods and accessory procedures and laboratory investigations. After clinical examination, with a careful history which includes an enquiry into the smoking habits of the individual, radiological investigations including tomography and, if necessary, bronchography are undertaken. Bronchoscopy is done routinely and may be rewarding in visualising and for taking a biopsy of a proximally placed tumour. Sputum cytology by trained personnel is another useful procedure. Biopsy of accessible superficial lymph nodes or scalene node biopsy may also prove the presence of malignant disease. Examination of the pleural fluid for malignant cells in cases with pleural effusion and biopsy of the pleura in those cases may also help. When no other tissue or material is available for histological study, thoracotomy and biopsy of the lesion itself may have to be done to arrive at a diagnosis.

PROGNOSIS :

Only 2 to 5 per cent of cases of bronchogenic carcinoma which have no treatment have a five year survival. 25 to 30 of every hundred cases of bronchogenic carcinoma are operable

as decided by examination by clinical methods and ancillary investigations. However, in only ten to twelve of these twenty-five to thirty cases will satisfactory removal (resection) be possible. Of those cases which have undergone resection, only 2 to 5 will be alive five years later. The most important criterion which decides the duration of survival is whether extra pulmonary dissemination of the cancer has occurred. The survival time is not related to sex or age of the patient, the duration of symptoms or size of the tumour. Generally, the survival time is longer for the cases with squamous cell carcinoma.

In view of the rather depressing outlook in a case with a diagnostic label of bronchogenic carcinoma, an attempt has been made to intensify the early diagnosis of bronchogenic carcinoma with a view to improve the prognosis with treatment. Periodic mass-miniature chest radiographs of the middle aged and elderly male members of the population, while it may help in detecting asymptomatic cases early, is itself a prohibitively costly endeavour and the "yield" does not justify such a cost. However, in actual clinical practice, cough in the adult heavy smoker which appears for the first time, or of which there is a change in character lately for which no other cause is detectable, should be investigated vigorously to exclude bronchogenic carcinoma. Dyspnoea with unilateral wheeze, haemoptysis with particularly a clear plain x-ray of the chest, recurrent attacks of "pneumonia" at the same site, anorexia with weight loss, pleural effusion without clear evidence of a tuberculous etiology, even if the fluid is sero-fibrinous—all these require investigations to detect or to exclude an underlying bronchogenic carcinoma. Hoarseness of the voice, dysphagia, cervical or axillary lymphadenopathy, mediastinal syndrome, etc. represent advanced disease with distant metastasis.

TREATMENT OF BRONCHOGENIC CARCINOMA :

In cases considered suitable, resection is the ideal treatment. Of late, radical lobectomy rather than pneumonectomy is the procedure of choice. In inoperable cases, radiotherapy for palliation has been found satisfactory. Cases with pain due to the neoplasm, persistent haemoptysis, pressure syndromes. particularly the mediastinal, are those for which deep x-ray therapy is particularly indicated. An interesting study has been that of the use of deep x-ray therapy in cases of bronchogenic carcinoma considered operable and in whom the outcome has turned out to be as good as that of surgical treatment itself.

Chemotherapy plays a subsidiary role in the treatment of bronchogenic carcinoma. Drugs like nitrogen-mustard have been used with varying degrees of success in the amelioration of symptoms, particularly those of pressure in the mediastinal syndrome in cases of inoperable bronchogenic carcinoma.

"I wish to thank the Director of Medical Services, Madras and the Dean, Stanely Hospital for according permission to give this talk and to refer to the clinical material of the hospital. My thanks are also due to my colleagues who kindly referred for my study some of the cases presented".

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Cranks are a menace: The scalpel-happy surgeon with a pet operation, the physician with a taste of amateur "research" which involves puncturing the patients' vital organs, the psychiatrist with a kink in his own psyche, the specialist who sees all disease in terms of his own narrow speciality — these do harm to their patients, if not by actual maltreatment, then by wasting their time with useless therapy. Established cranks are deaf to logic and blind to statistics. We must all watch ourselves for the early symptoms and signs of mis-directed enthusiasm, and take steps to treat them with large doses of sceptical commonsense. A few bees in the bonnet may be permitted to grey hairs, but a swarm is a sign of senility. — Dr. Forbes.

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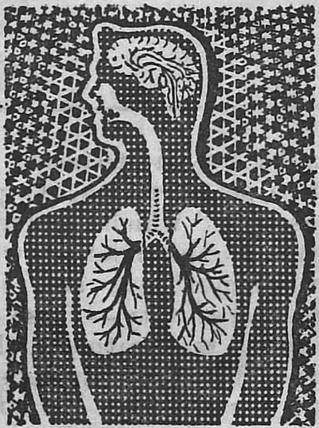

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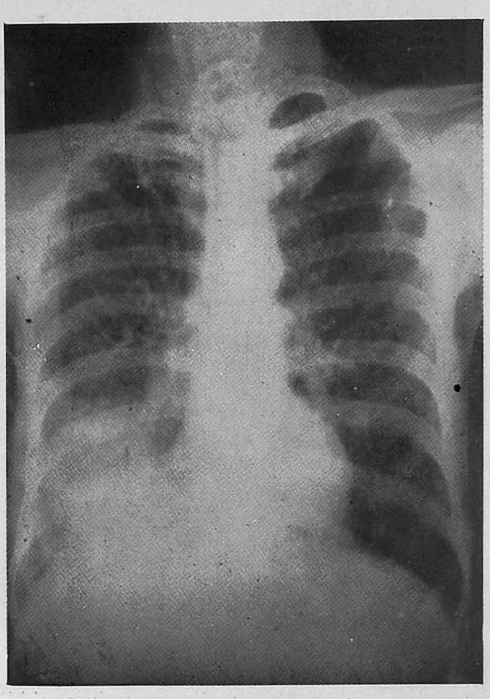

FIG. 1.

Case No. 1 – Bronchogenic carcinoma (Squamous cell-type) right lower lobe, in a 50 year old male; he had hypertrophic osteoarthropathy which showed spontaneous regression; at postmortem, extensive metastasis in the liver and both suprarenals were noticed; the calcified lesion in the left upper lobe may be noted.

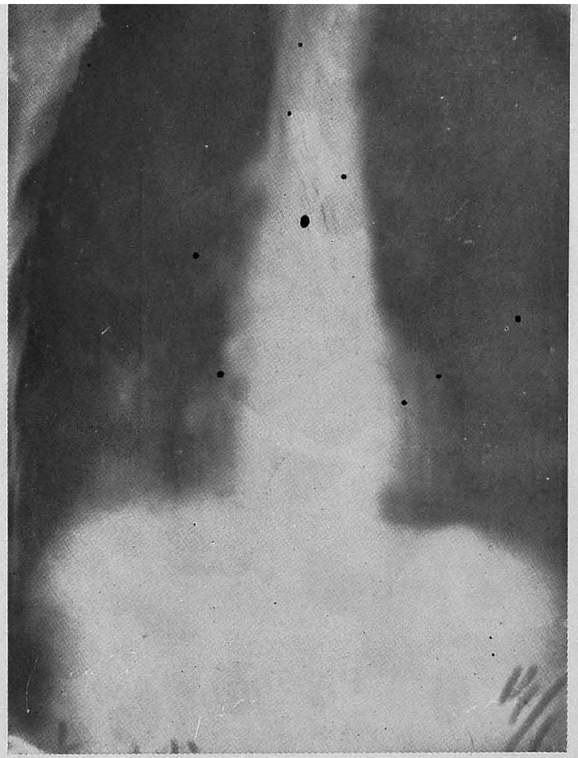

FIG. 2.

Case No. 1 – Tomogram showing a calcified spot in the mass-an unusual feature, probably carcinoma occurring at the site of an old healed tuberculous lesion.

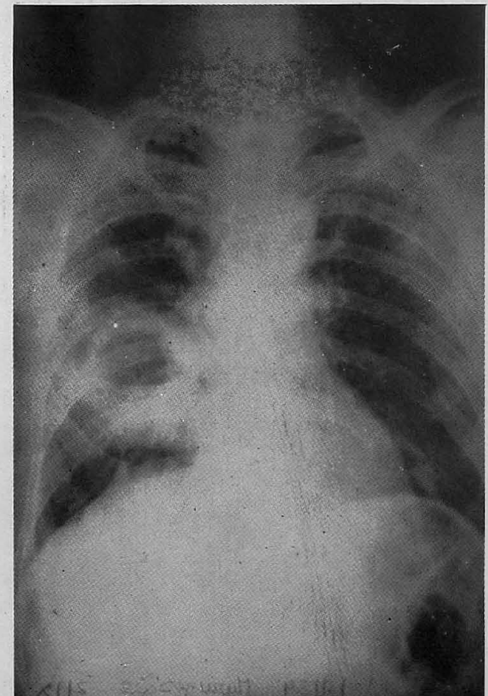

FIG. 3.

Case No. 2 – Carcinomatous abscess, right middle lobe, in an elderly male who had an overlying chest wall swelling, due to metastasis, with destruction of overlying rib.
P. A. View.

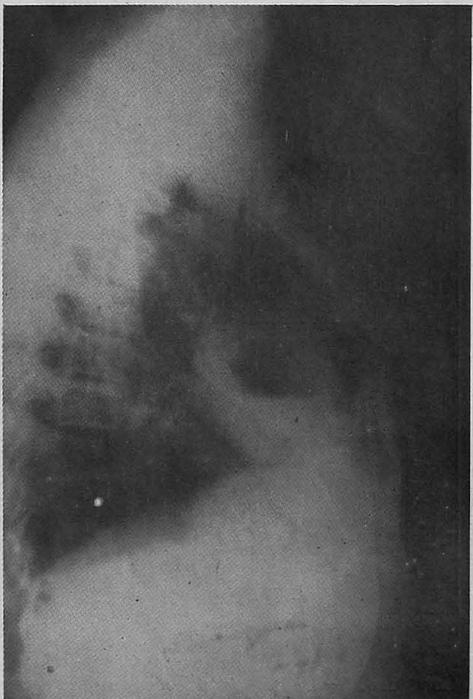

FIG. 4

Case No. 2 - Lateral view showing position of the "abscess" in the middle lobe.

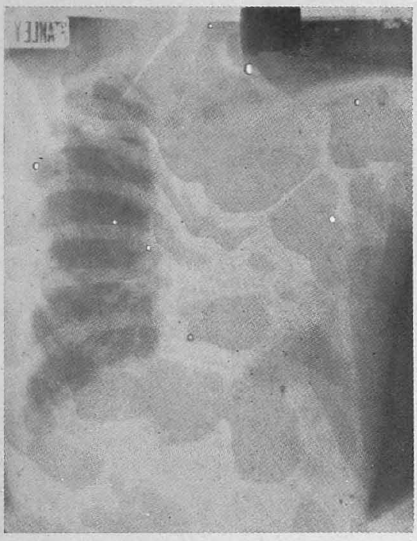

FIG. 5.

Case No. 3 – Carcinoma of the left main bronchus causing collapse of the left lung.

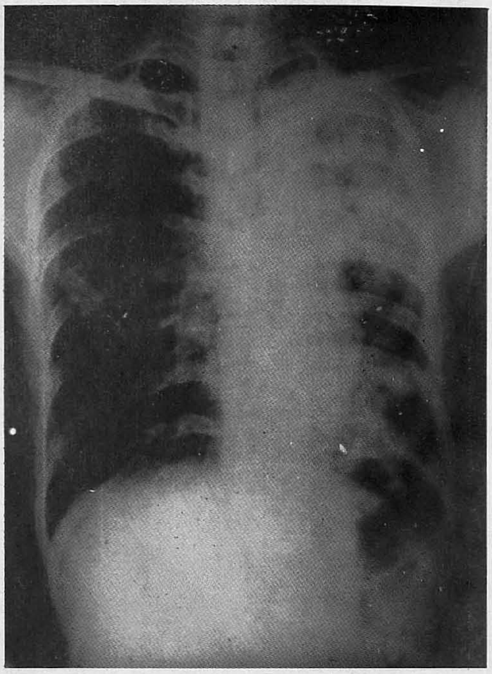

FIG. 6.

Case No. 4 – Left upper lobe cancer in a middle aged male whose initial presenting complaint was scalp-tumour, due to a large secondary deposit, the destructive metastasis in the right 7th rib may also be noted.

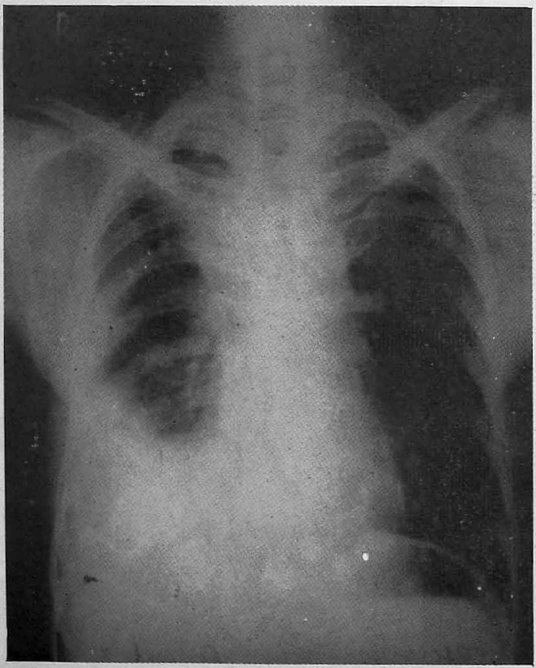

FIG. 7.

Case No. 5 – Bronchogenic carcinoma presenting features of mediastinal syndrome. Biopsy of the pleura on the right side showed malignant infiltration of the pleura.

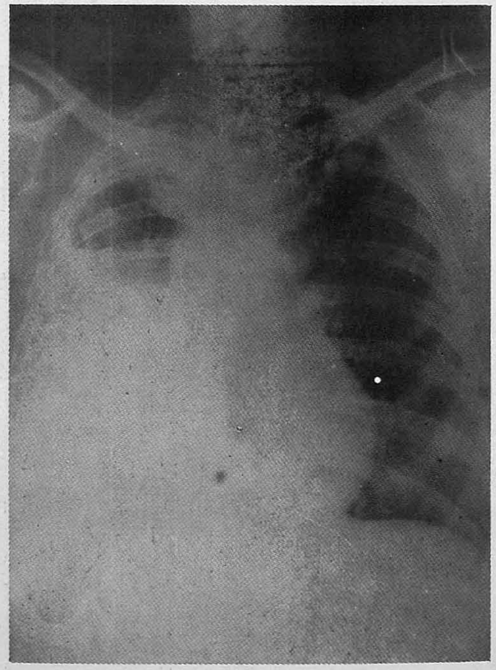

FIG. 8.

Case No. 6 – Malignant pleural effusion in a fifty year old male-the fluid was serofibrinous initially and treatment as for tuberculous pleural effusion earlier, was ineffective, malignant cells found in pleural biopsy material and in pleural fluid.

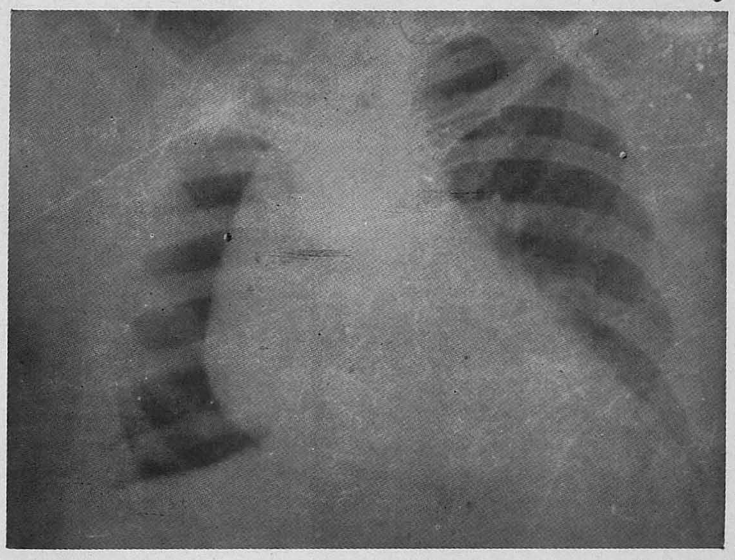

FIG. 9.

Case No. 7 – Adeno-carcinoma, right lung, in a thirty-five year old school teacher, which had presented itself as an inexhaustable pleural effusion (clear-straw-coloured fluid) with later development of an inexpandable lung; right axillary lymph node biopsy-adeno-carcinoma. Pleural biopsy showed malignant infiltration of sub-pleural layer.

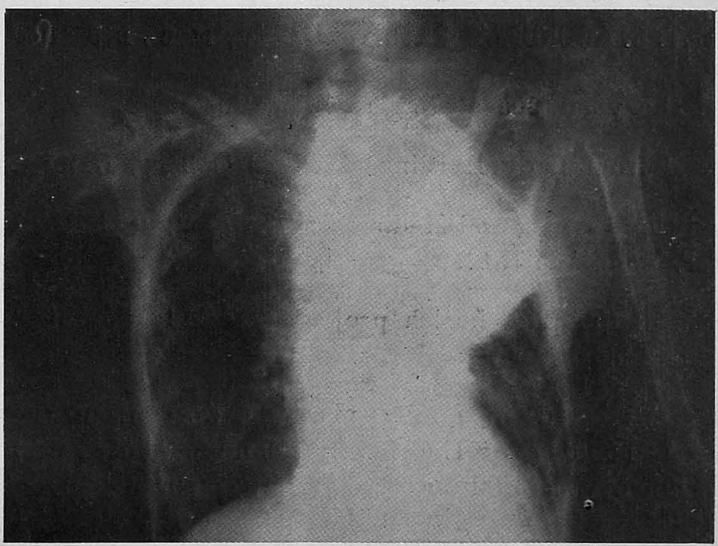

FIG. 10

Case No. 8 – "Pancoast Syndrome" — apical bronchogenic carcinoma in an elderly lady with destruction of posterior ends of upper ribs.

Our Congratulations!

Dr. Mrs. T. S. SOUNDRAM RAMACHANDRAN, M. B., B. S., D. G. O., M. P.

Born in the year 1905 at Nagercoil.

Graduated from Lady Hardinge Medical College, Delhi, in 1936.

Founded the Avvai Rural Medical Service along with Dr. Mrs. Muthulaxmi Reddi at Adyar, Madras in 1943.

Chairman of the pilot health project — a 20 lakh project — covering 100 villages in Athoor block.

Actively interested in family planning work from the early thirties. Nominated as a member of the family planning board constituted by the Central Government as well as the family planning board of the State Government.

Returned to Lok Sabha from Dindigul constituency. Now appointed as Deputy Minister for Education, in the Ministry of Education, Government of India.

Awarded 'Padmabushan' on 26th January, 1962.

TUBERCULOSIS IN GYNAECOLOGY*

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In recent years there has been a widespread awakening of interest in the whole subject of genital tuberculosis in women, and particularly in endometrial tuberculosis. The never ceasing interest in this subject is due to the significance of the malady, varying manifestations, associated problems and the intriguing manner in which it masquerades as other gynaecological conditions.

It is generally understood that endometrial tuberculosis is more frequent than was previously thought and it is often unaccompanied by any palpable pelvic lesion and is found more or less by chance as a result of uterine curettage performed for gynaecological complaints notably sterility, either primary or secondary. It is found in 2 to 5·5% of women seeking advice for sterility in a series reported from Western countries (T. L. T. Lewis, 1956). In our hospital, for the last three years, it has been found in 4·08% of women seeking advice for sterility. It is of course sometimes found in association with other complaints such as menstrual irregularity and amenorrhoea, but sometimes there may be no menstrual disturbances and so no indication apart from sterility for the curettage to be performed. Patients are otherwise healthy and in their sexual prime.

Incidence: Since a great number of cases are discovered incidently in clinically unsuspected cases and since a large number of symptomless cases remain undiscovered, the actual frequency of genital tuberculosis in women cannot be assessed with accuracy. In the last three years at the Christian Medical College Hospital, we have had 62 cases of genital tuberculosis which represents 0·5% of the total attendance at the gynaecological outpatient department.

Age: It usually occurs during the child bearing age. Jedberg (1950) reports that 80% of his cases were between 20 and 40 years. In our series, the average age at diagnosis is 27 years, the youngest being 16 years and the oldest 50 years of age.

Pathology: It is an accepted fact that the vast majority of genital tuberculosis is secondary to tuberculosis elsewhere in the body. The primary focus may be in the lungs or pleura in 60 to 80% of cases (according to Jedberg and Barnes). Other sites are lymph glands, lesions in the abdomen, bone and kidney. From the primary site, the disease spreads by the blood stream to the fallopian tube and from there directly to the endometrium in 90% of cases (Haines, 1958). This means that tubal tuberculosis can be inferred from an examination of the endometrium in most cases but not in all.

The common sites of infection in the genital tract are the tubes, endometrium, cervix and ovaries. Tuberculosis of the cervix, though reported

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to be rare in Western countries, is more common in our country. In Madras, Rewell (1958) found tuberculosis of the cervix in 25% of the cases of endometrial tuberculosis. In our series the incidence of tuberculosis of the cervix was 35%. Cervical biopsy was done in all cases where the cervix looked unhealthy.

Tuberculosis of the vulva is a rare disease, constituting 1 to 2% of all cases of pelvic tuberculosis. It is more common in the young adult, but it is occasionally found in the young child. It may be primary, as in the case of a chid infected by a tubercular parent or of a woman infected by a husband with tuberculous epididymitis. As a rule, however, it is secondary to a focus elsewhere in the body, reaching the vulva from a lesion at a higher level of the genital tract, from a lesion in the renal tract, or via the blood stream by bacilli derived from an extra pelvic source. In our series we had not a single case of vulval tuberculosis.

Diagnosis and clinical manifestations: Patients with pelvic tuberculosis can present themselves for treatment because of a variety of symptoms. A large number of patients complain only of infertility, and pelvic examination usually reveals an apparently healthy pelvis and it is not until the biopsy report has been received that the diagnosis of tuberculosis is made.

Clinical manifestations of genital tuberculosis may be sterility, menstrual disorders, pain or vague discomfort in the lower abdomen, peritonitis, or postmenopausal bleeding. A few patients may not present any signs or symptoms.

Sterility: The majority of patients with tuberculous endometritis are sterile with no other symptoms. The incidence of genital tuberculosis among infertility patients is about 4 to 5%.

Just as mass radiography has helped in the detection of silent and unsuspected pulmonary lesions, so the increasing use of biopsy currette in gynaecology has helped in the detection Of unsuspected genital tuberculosis.

Jedberg (1950) has shown that genital tuberculosis can occur within one year of the initial manifestations of the pulmonary tuberculosis. Most cases, however, remain silent for a variable period of time and are usually not discovered until infertility causes the patient to seek gynaecological advice. Genital tuberculosis can cause both primary and secondary infertility, so that all women with this symptom should be examined under anaesthesia and the uterus curetted.

Menstrual disorders: About 25 to 50% of patients show some sort of menstrual disorder. This change may take the form of amenorrhoea, oligomenorrhoea, polymenorrhoea or menorrhagia. In other words, any variety of menstrual abnormality may be caused by genital tuberculosis.

Amenorrhoea: Most of the authors claim that amenorrhoea is not a prominent symptom in genital tuberculosis. Primary amenorrhoea is said to be a rare manifestation of pelvic tuberculosis by Reiss (1958). In our series amenorrhoea was one of the most prominent symptoms. 56% of our cases had either primary or secondary amenorrhoea. The longest duration of amenorrhoea in our series was for 10 years. In our series of 62 cases of genital tuberculosis, 33 cases had secondary amenorrhoea and only 2 cases had primary amenorrhoea.

The possible causes of amenorrhoea (Reiss, 1958) in cases of pelvic tuberculosis are three-fold:

1. Destruction of ovarian tissue by parenchymatous infections, but this is very rare.
2. Destruction of all gland bearing endometrium.
3. Atresia of the lower part of the uterine cavity.

Oligomenorrhoea and hypomenorrhoea occurred in 15% of cases (9 cases). The intractable metrorrhagia of young girls is specially to be suspected of being tuberculous in origin.

Leucorrhoea: While leucorrhoea is too common in a child bearing woman to warrant undue emphasis upon it as a symptom of uterine tuberculosis, the discharge may be mucoid, serosanguinous, mucopurulent or frankly purulent. In our series, 30% of cases did complain of leucorrhoea. The glairy mucoid discharge is said to be characteristic of cervical tuberculosis.

Abdominal pain: Pain in the lower abdomen was present in 30% of our cases. Usually the pain is insidious in onset, not severe, but felt as a vague discomfort in the lower abdomen and is of long duration not necessarily related to menstrual periods.

Other symptoms: Some patients may complain of fatigue, loss of weight or fever, but these are all too vague to be of real help. Nevertheless, when a woman is indefinitely unwell, the possibility of genital tuberculosis being the cause should be entertained.

Physical signs: In more than half the cases, no abnormal findings palpable by bimanual examination of the pelvis even under anaesthesia can be found. In some cases one may find thickening in the adnexal region and in some cases one may find tubes are definitely enlarged forming tubo-ovarian masses. As a rule, tuberculous tubo-ovarian masses are less tender than those in pyogenic infections, although secondary infections and acute exacerbations may cause pain and tenderness. When the tube is enlarged in a virgin, the cause is usually tuberculosis, and most often causes of salpingitis are as a result of sexual intercourse, abortion or child birth. Other ulcerative or hypertrophic lesions of the cervix, vagina or vulva need biopsy for full diagnosis. The naked eye appearance, though possibly suggestive, is never diagnostic.

Special investigations: Some special investigations are essential in patients in whom genital tuberculosis is suspected on clinical evidence.

Curettage is the most important and valuable investigation, because one gets the necessary material for histopathological examination, direct smear, culture and guinea-pig inoculation. It is always better to do a full curettage under anaesthesia than endometrial biopsy by just taking a few strips of endometrium. Curettage should be done in the premenstrual week to have the maximum diagnostic value. Tissue should be obtained from the cornual end of the uterus, since this is the area most frequently involved by spread from the tubes.

Bacteriological diagnosis: Direct smear and culture of the premenstrual endometrium or menstrual blood and cervical mucus are useful where the endometrial tissue is inadequate for histological diagnosis, though one

should not entirely depend on bacteriological examination, for often one may get a negative report as the small quantity of endometrium available may not contain living organisms. In such cases guinea-pig inoculation is useful but costly.

Hystero - salpingography : As a diagnostic procedure, hystero - salpingography is controversial, as this investigation may cause a flare up of the infection.

Treatment: Pelvic tuberculosis, even though asymptomatic, must be treated. There are many different regimes of antituberculous chemotherapy, and it is useful to give all the three main drugs, since there is often resistance of the organism to one or the other of them.

The full course of treatment should last at least for a year.

O. Driscoll (1959) recommends the following scheme :—

When the disease is discovered during curettage, the patient is told that the course of drug treatment will take at least one year.

The exact combination does not appear to be so important as the duration of the treatment. However, either streptomycin or I. N. A. H. must be used together or alone with P. A. S. to prevent emergence of resistance. The safer combination is streptomycin 1 gram daily for 3 months leaving one day free in each week for the first 3 months with I. N. A. H. and P. A. S. daily. At the end of 3 months, streptomycin is withdrawn and again included in the 3rd month instead of I. N. A. H. The latter again replaces the streptomycin in the last 3 months of treatment.

The patient is seen if possible during treatment to ensure that the drugs are being taken and that no toxic symptoms are occurring. The break in the course of streptomycin allows the patient to rest from injections without apparent loss in the efficacy of treatment. At the end of 12 months, the patient is admitted to hospital for a careful re-assessment. This includes examination of the pelvic organs under an anaesthesia and a curettage and a hystero - salpingography. If there is no palpable enlargement of the tubes and they are patent on both sides, the patient is discharged cured, but warned to report for examination if she suspects pregnancy, because of the danger of an ectopic gestation.

Surgical treatment: Indications for surgical treatment are :

(a) Failure of chemotherapy to control a proved tuberculous genital tract lesion. The evidence of failure is enlargement of adnexal swelling during treatment or its recurrence after adequate treatment.

(b) Patients in whom secondary infection has resulted in recurrent attacks of pelvic inflammatory disease with gross disorganisation of the pelvic viscera.

If any surgical operation is to be performed on these patients, it must consist of total hysterectomy and bilateral salpingo - oopherectomy. Conservative operations such as simple salpingo - oopherectomy may lead to spread of the disease and fistulae formation.

Prognosis: With proper conservative treatment by anti - tubercular drugs, 90 to 95% of patients will be cured or much improved of their pain or abnormal cycles.

It will, however, not restore fertility, though a few cases have been reported of pregnancy following anti-tuberculous treatment, but the possibility of ectopic should be kept in mind.

SUMMARY:

At the Christian Medical College Hospital, Vellore, we have had 62 cases of genital tuberculosis in the last three years. This represents 0·5% of all patients attending the gynaecological outpatient department.

Endometrial tuberculosis is usually found as a result of uterine curettage performed for gynaecological complaints such as sterility or menstrual disorders.

In Western countries genital tuberculosis is found in 2 to 5% of women seeking advice for infertility, whereas in our hospital it has been found in 4% of women seeking advice for infertility.

25 to 50% of cases show some sort of menstrual disorders. 56% of our cases had amenorrhoea of which only 2 cases had primary amenorrhoea. The longest duration of amenorrhoea in our series was for 10 years. 19% of our cases had oligomenorrhoea and 15% of the cases had menorrhagia or metrorrhagia. Vague pain in the lower abdomen was complained of in 30% of our cases. Another noteworthy feature is that while tuberculosis of the cervix is a rare phenomenon in the West, 36% of the patients in our series are found to have tuberculosis of the cervix.

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He was a sprightly octogenaration who had been admitted during the night with retention due to an enlarged prostate. The surgeon with retinue, was doing his Saturday morning ward round. The cause of the trouble and the proposed course of treatment was explained to the old man, but he refused all operative treatment and announced that he was going home—catheter and all. He would give no reason but said he might come back "after Monday". When the vanquished surgeon, registrar and houseman had left the ward, he confided to a sympathetic nurse that he was "due to be married on Monday"

(Lancet Peripatetic Correspondent).

— Courtesy - Unichem Medical Notes.

MANAGEMENT OF PRECORDIAL PAIN

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The management of precordial pain depends upon the cause. The underlying cause has to be treated. Given a case, one has to quickly eliminate the cardiac conditions, foremost amongst them being coronary thrombosis. With regard to coronary thrombosis, the pain as a rule is in the precordium though it can be felt in other parts of the body. Irrespective of the site of pain, invariably there is also substernal discomfort. The substernal discomfort may only be elicited on specific questioning. Though coronary thrombosis can occur in all age groups, it is more common in people past the age of 40, in subjects of hypertension, and diabetes and also in persons accustomed to taking liberally fats of animal origin. In the vast majority of cases, the case offers no problem. The diagnosis obviates by its sudden onset, extreme restlessness and pallor, some times sharp and some times it is the pain that is the dominating feature.

Having made the diagnosis of coronary thrombosis, the essential features with regard to treatment is to relieve the pain. The pain once it is relieved allows the patient to take rest and shock is avoided. To relieve the pain, the best agent is morphia or pethidine. If the patient is in a state of shock or the pain is very marked, morphia 1/4 gr. should be given intravenously. It is administered intravenously because the circulation is very slow. If the drug is given I. M. to a person in a state of shock, due to the lack of absorption, pain may persist. As I have already stated, it is the unresolved pain that is the cause of shock which favours a high mortality in coronary thrombosis. The second dose of morphine may be repeated even at as short an interval as 2 hours after the first one if the pain recurs. The time interval at which morphine is needed gives an excellent prognostic value. Cases in which 2 hourly injections of morphine are needed carry a bad prognosis. In the vast majority of cases where recovery occurs, on an average they need 4 or 5 injections in the course of 24 hours on the first day, and 2 or 3 injections on the following day. The main objection to morphine is the depressing effect on the cardiac and respiratory controls and vomiting that may accompany it. It may also cause constipation. To overcome this difficulty, 100 mgms. of pethidine may be substituted for morphia. Though as a rule patients are not sensitive to pethidine to the same extent as they are to morphia, yet one may occasionally come across a patient who is equally sensitive to pethidine. Luckily these are few. The mortality in many cases of coronary thrombosis is due to inadequate administration of morphine. A very useful supplementary agent that can be used to control the pain of coronary thrombosis is novalgin 5 cc. in 10 cc. of $12\frac{1}{2}\%$ glucose intravenously.

Along with morphine or pethidine, oxygen inhalation must be started. The best way to administer oxygen is to give it preferably in an oxygen tent. At present there are not many

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institutions in India where oxygen tent is available. The next best thing is to use a B. L. B. mask. Where this also is not available, it can be administered by means of a nasal catheter. If a nasal catheter is to be used, the catheter must be passed well back into the nose as far as the nasopharynx. Often I have seen in the wards the nasal catheter is just put into the tip of the nose. While such a procedure is done, patients may not get sufficient supply of oxygen. When the nasal catheter is passed well back into the nasopharynx, it may provoke certain amount of discomfort since the nasal mucous membrane is likely to treat the catheter as a foreign body. To avoid this irritation, the catheter may be smeared with a local anaesthetic agent like Nupercaine ointment. The oxygen should be made to bubble through water. The advantage of this procedure is, one is certain that oxygen is being administered and as the oxygen bubbles through water, it gets moistened. Dry oxygen is an irritant to the respiratory passages. The rate of oxygen should be fast enough so that one just fails to count the bubbles. Often the practitioners feel shy of starting the patient with oxygen inhalation, as they feel it may have an adverse psychological effect on the patient. All that is necessary is to explain to the patient the need for ensuring rest and how the oxygen avoids further strain on the myocardium. The disrepute to which oxygen has fallen is due to the delay on the part of medical men to start oxygen early in the course of the illness and starting it in desperate cases with the result that the patient considers oxygen inhalation as a terminal rite. The advantage of oxygen inhalation is, it cuts down the pain and shock is controlled and the need for further dose of morphia is considerably lessened.

The recent trend is to start the patients on anticoagulants irrespective of the severity or otherwise of the coronary thrombosis. The ideal procedure will be to put him on heparin I. V. 12 to 15 thousand units. Heparin is to be repeated every 4 to 6 hours depending upon the coagulation time. Clotting time may be kept round about 20 minutes. If the clotting time goes beyond 20 minutes, heparin injection may be delayed. Simultaneously with the administration of heparin, the patient can be started on cumoral derivatives like Sintrom or Tromexan. Sintrom is available as 4 mgm. tablets and Tromexan as 300 mgm. tablets. It is claimed that Sintrom is a safe anticoagulant with minimal side effects and it is easy to control the prothrombin time and maintain the same at therapeutic levels. The cumoral derivatives take time for their action to occur. They have to prevent the liver from manufacturing prothrombin which takes between 24 to 48 hours. Till their action starts, the patient has to be on heparin. But the heparin action is over within 3 to 4 hours time. So it has to be given round the clock every 3 or 4 hours. To avoid this, depot heparin is available which is slow acting and one injection is sufficient for 12 hours.

Once the patient is started on an anticoagulant, he should be maintained on that for the next 3 or 4 weeks. Anticoagulants need constant laboratory control. Where there are no facilities for doing prothrombin time, it is risky to start the patient on anti-coagulants. Where multiple thrombosis occurs or coronary thrombosis recurs at short intervals, it may be necessary to

keep the patient on anti-coagulants for a much longer time than 6 weeks. Some of my patients are on anti-coagulant therapy for over a year. In spite of the fact that the prothrombin time is normal, bleeding can still occur. In a male patient while on cumorol derivatives, if he complains of burning sensation on passing urine, it is worth while to examine the centrifuged deposits of his urine for R. B. Cs. This is an early warning symptom. I insist on the patient collecting the urine every time in a conical glass and show it either to a nurse or to a medical officer. Change in the colour of urine - rosy colour - should be taken as a warning symptom. Sometimes instead of haematuria, haematemesis or haemoptysis or bleeding piles may occur. In any case once blood is brought out, the drug should be stopped and the patient given transfusion and also vitamin K_1. Vitamin K_1 under the trade name of Konakion is made by Roche. The drug is not available in the market. Those people supply it free of cost to a few clinical centres. This is a very useful drug in controlling the bleeding that occurs in the course of cumorol derivative administration.

Having controlled the pain, oxygen inhalation is started. If the patient has been started on an anti-coagulant, the next most important problem is diet. First 24 to 48 hours, diet should be low and practically of no calorific value. This is achieved by putting the patient on glucose and fruit juice. At the end of 48 hours, if the situation is not getting worse, the diet can be slowly liberalised taking over three weeks to resume normal diet. It is wise to start the patient at the beginning on liquid paraffin as an emulsion at bed time to keep the bowels open. The dose of the emulsion may be adjusted so that a formed motion is formed not oftener than twice in the course of the day.

These patients need to be treated with bed rest for 6 to 8 weeks even if the attack is mild. While the attack is any thing more than mild, they may have to be in bed for longer periods. The convalescence should be slow. For the next 6 months, patients should not go up the stairs walking. He should not strain himself either physically or mentally to the point of getting exhausted.

A good prophylactic measure will be to have the blood cholesterol estimation done and if it is found to be grossly elevated to put the patient on low fat low cholesterol diet and also on nicotinic acid. The dose of nicotinic acid should be about 700 to 800 mgms. per day.

The next important condition is angina pectoris. When angina pectoris occurs as a sequelae of coronary thrombosis, it generally starts after about 40 days of myocardial infarction. It is generally sub - sternal and lasts for a few minutes only and is quickly relieved by nitro glycerine. X-ray examination of the cervical and thoracic regions to eliminate spondylitis must be done in all cases of chest pain.

In the elderly people osteoporosis may be the cause of chest pain. Irrespective of the cause, angina pectoris can be relieved by amyle nitras inhalation. Obviously this is not available for the first attack. The drug must be carried all the time by the patient and is best used by crushing the capsule in a folded kerchief and inhaling it as deeply as possible. The relief is very quick,

but the effect only lasts for 15 or 20 minutes. It has no place as a prophylactic. It can only be used to control the attack. In contrast to this glyceryl trinitrite tablets 1/100th of a grain can be carried about and it can be used both for curative and for prophylactic purposes. When it is intended for prophylactic use, that is before the patient exerts or before he goes to a place where he is to meet an unruly audience, he can put one pill sublingually about 15 minutes before the expected event. Then he will be able to exert fairly well for the next 3 hours. If the attack is on, then the pill must be chewed and taken and when the pills are chewed, the relief is quicker. When it is given sub-lingually, it may take 2 to 3 minutes for its action to be felt; but the effect lasts for the next 3 to 4 hours. The main unpleasant side effect is headache. If headache occurs and is too unpleasant for the patient, the dose of the tablet can be cut down to half. Longer acting drugs than glyceryl trinitrine are available, like peritrate, penta ethyl tetranitrate. In between the attacks steps should be taken to correct the focal sepsis. Have the blood serology done and if it is positive, a course of P. A. M. and bismuth is to be given, and also if there is sugar in the urine, steps should be taken to correct the same. Patient should be advised not to smoke cigarettes or beedies and avoid tobacco in any form completely.

Where there is an undue anxiety on the part of the patient, a sedative like phenobarbitone $\frac{1}{4}$ gr. b. d. or a tranquilliser like Librium 10 mgm tablets, once or twice a day may be found of great value. Lot of reassurance on the part of medical men is indicated in these cases. If there is diabetes that also needs to be corrected. It may also be worth while to lower the B. M. R. by the use of drugs like Neomercazole or by irradiating the thyroid or submitting the patient to a sub-total thyroidectomy. Of the various procedures I prefer the administration of Neomercazole 1 pill t. d. s. p. c.

The precordial pain may often be secondary to sub-diaphragmatic conditions like amoebic hepatitis, chronic cholecystitis, or a peptic ulcer. In these cases the positive factors must be attended to.

In young men and women a left sub-mammary pain should suggest the possibility of an anxiety state. These are best treated in collaboration with a psychiatrist.

We do not often realise to what extent remarks from us will upset the patient's mental equillibrium. Permit me to recall an incident which was reported in the B. M. J. some years ago. The incident is as follows:

A young man appeared before a medical man for insurance examinanation. Ever since his examination took place, he was wandering from doctor to doctor, from one cardiologist to another for vague discomfort in the chest. Though his heart was declared normal by a number of them, he was not satisfied. Finally the last cardiologist who saw him referred him to a psychiatrist. In the course of the analysis, it was elicited that the doctor who examined him for insurance purposes remarked that, "tut, tut, it is too bad", as he was listening to his heart sounds. So the insurance medical officer was rang up and he was asked whether he considered this young man's heart condition was bad. He replied, after

persual of his records, that this man's life was passed as first class. It means his heart was considered as good. Then the medical man was asked for an explanation why he said that, "tut, tut, it is too bad", when he was listening to this young man's heart sounds. After a little while the medical man said that he had received his watch only that morning from the repairer after a long delay. In spite of the time that the repairer has taken, the watch had come to a stop, as he was auscultating this young man. The remark, "tut, tut, it is too bad", was intended for the watch. But this young man had interpreted it to mean that his heart was bad and he was going from doctor to doctor. That only shows the need for us to be cautious while we talk to our patients. In every case of precordial pain, therefore, a thorough investigation must be done to find out the cause including a psychiatric examination and the cause must be controlled or eradicated.

An elderly gent, named Martin went to a doctor for an examination. "I want you to tell me what's wrong Doctor. I feel some pains here and there and I can't understand it. I have lived a very clean life, no smoking, or running around. I am in bed, alone, at 9 o'clock every night. Why should I feel this way ?"

"How old are you ?", asked the doctor.

"I will be 74 on my next birthday", said Martin.

The doctor answered, "After all, you've lots of time left yet. Just take it easy and don't worry. I suggest you go to Hot Springs !"

So Martin went to Hot Springs. There he met another gent who looked so old and decrepit, that Martin felt encouraged by the comparison.

"Brother", says Martin, "you sure must have taken good care of yourself, living to such a ripe old age, like you have reached ?".

So this shriveled old guy says: "On the contrary, Sir, when I was 17 my father told me : Son, you go and enjoy life. Eat, drink and be merry, to your heart's content. Live life to the fullest. Instead of marrying one woman, be a bachelor and have ten women. Spend your money for fun, for yourself, instead of on a wife and kids".

"Yeah : Wine, women and song, life lived to the full. That's been my policy all my life, brother !".

"Sounds like you got something," said Martin.

"How old are you ?"

The other answered "24"

— *Courtesy - Unichem Medical Notes.*

ASSOCIATION NOTES

BRANCH NOTES

Coimbatore Branch:

PRESIDENT'S REVIEW

I am happy to review the encouraging work done by the Coimbatore District Medical Association, a branch of the Indian Medical Association, for the year 1961—'62. The medical association with its office-bearers and members was responsible in adumbrating a few proposals which were gone through successfully. Progressive good work has to be done from year to year, so that the medical association may yield to none in the success of its administration.

The Coimbatore District Medical Association was responsible in starting a refresher course for the medical personnel in Coimbatore. In the wake of this consummation, the committee which was responsible for the creation of Dr. P. N. Ramasami Naidu Memorial Endowment Trust has promised to finance the Coimbatore District Medical Association for conducting the future refresher courses. The trust in its enthusiastic endeavour is expected to finalise this proposal so much so the Coimbatore District Medical Association with the large-hearted members constituting the P.N.R. Trust will keep aloft the successful refresher course from year to year.

The Coimbatore District Medical Association owes it allegiance to the Coimbatore Municipal Council. One of our members who held the destinies of the Municipal Council as Chairman, Municipal Council, was responsible in locating the medical association buildings on the site in which we are gathered. We are addressing the Municipal Council for giving us facilities, conveniences and amenities for providing easy means for reaching directly Krishnaswamy Mudaliar Road on the eastern side from the Association premises. We request the Municipal Council to come to our rescue and give us the much needed approach.

We are a body of voluntary workers. Our technical personnel should be utilised by the society in the manner in which it requires for improving its health in progressive Coimbatore. Medical facilities in Coimbatore are becoming very costly consistent with the heavy cost of drugs, medicines, increased rentals of buildings occupied by doctors, etc. The poor and the middle class bear this brunt heavily. It is, therefore, suggested that a free dispensary is started for the poor under the auspices of the Coimbatore District Medical Association on a programmed phase. Drugs, medicines, etc. will be purchased from the donations offered by voluntary organisations and philanthropic gentlemen of Coimbatore. If an institution of this high order is started, it will pave the way for catering to the suffering sick. We can also use this centre for public health propaganda in various parts of the city and environs in the district and thus rise the public health conscience of the citizens.

It is also necessary that the members of the medical association should have a system of group medical practice instead of individual practice, so that these institutions may be running throughout the 24 hours for service to the people. At present there seems to be a lurking anxiety among the citizens of Coimbatore, and this anxiety is given vent to in confidential circles that adequate medical facilities are not available during nights. If group medical institutions are started, adequate medical succour can be given by individual medical personnel who will work at stated intervals in answering the urgent needs of the suffering sick.

Our association can rightly possess several exhibits, models, specimens, etc. to form a museum of hygiene, which may also possess anatomical varieties in health and disease. Modern health exhibits serve to improve the knowledge of the composition and structure of the human body and the functions of its organs and organic system. The museum will carry its message to healthy living to all the corners in the district and attract crowds of interested visitors. The museum will also be an attractive institute for health education.

It is the aim of the Coimbatore District Medical Association to mingle freely into the composite society and to raise its standard of efficiency in the promotion of health. We would require several "KRISHNAS" of sound structure in body and mind. We would appeal to society to be free from cowardice, anger and jealousy and pave for peace and tranquility, as ordained by sage Pattinathar :

"ஆவியொடு காயம அழிந்தாலும மேதினியில்
பாவியென்று நாமம படையாதே"

— பட்டினத்தார்.

We can then be strong in body-build, free from malady and annihilate the infirmities of old age as prayed for by that devotee Nammazhvar of the "PRABANDAM" fame, who seeks God's mercy to keep mankind healthy and strong in the following stanza :

"ஓயும மூப்புப் பிறப்பு இறப்பு பிணி
வீயுமாறு செய்வான திருவேஙகடத்து
ஆயன நாள—மலர் ஆம் அடித்தாரை
வாயுள்ளும் மனத்துள்ளும் வைப்பார் கட்கே".

— நம்மாழ்வார்.

In this prayerful mood, I welcome our Director of Medical Services to this city of ours, to this city which is abounding in a sprightly set of medical men and women, to this city which promises to become the seat for a medical college to be started in the first period of the third five year plan. I welcome the Director of Medical Services not only for the post she is holding but also for the sex to which she belongs. On behalf of the Coimbatore District Medical Association and on my own behalf, I extend a

hearty and enthusiastic welcome to Kumari A. B. Marikar, M.D., D.G.O., Director of Medical Services, Madras. I pray that she should continue to be sound in health to preside over the destinies of the medical personnel in this state to which we happily belong. I visualise that during the tenure of office of our Director of Medical Services, the medical officers and health officers will occupy a position not less in rank to that of I.A.S. officers.

I wish the members of the Coimbatore District Medical Association well. I wish all the branches of the Indian Medical Association in our land of tradition, culture and erudition all glory so that the Indian Medical Association may become a live force to strengthen the hands of Nehru, the Great.

"Vengadam",
Coimbatore–3.

G. T. GOPALAKRISHNA NAYUDU,
President,
Coimbatore District Medical Association.

Madurai Branch :

1. A monthly meeting of the Madura Medical Association was held on Saturday the 21st April 1962, under the presidentship of Dr. K. Ramachandran, M. S., Madurai. The following resolutions were passed unanimously :

1. " This meeting of the Madura Medical Association records with deep regret and sorrow at the sudden demise of our beloved and respected Dr. D. V. Venkappa, a pioneer active member of the medical associations, who dedicated his life for the uplift of the medical profession especially of the medical licentiates and for his valuable services rendered in putting forth the claims and grievances of medical men during his presidentship of the medical associations and the Madras Medical Council and as a committee member of the Indian Medical Council. The secretary is requested to convey our condolences to the bereaved family ".

2. " This meeting of the Madura Medical Association expresses its deep sense of sorrow at the demise of Dr. Mokshagundam Visweswarayya, a centenarian, and places on record his monumental work done both as a professional engineer and as an administrator in the cause of education, industries and in rural uplift. The secretary is requested to convey our condolences to the bereaved family ".

3. " This meeting of the Madura Medical Association, while thanking the government of Madras for exempting the private medical practitioner owning dispensaries and dispensing medicines to his patients only, whether he charges consultation fee or not from the operation of the section 20 of the Madras General Sales Tax Act, congratulates the Madras State Branch of the Indian Medical Association in getting the exemption by its active efforts made for the past five years ".

Dr. P. Govinda Rau, M. B., B. S., F. R. C. S., F. I. C. S., Associate Member of the British Association of Urological Surgeons gave an interesting lecture on 'Recent Advances in Urology'.

2. A monthly meeting of the Madurai Medical Association was held on Saturday. the 26th May 1962, under the presidentship of Dr. K. Ramachandran, M. S., Madurai. The following resolution was pased unanimously:

"The members of the Madura Medical Association have great pleasure in congratulating Dr. (Mrs.) Soundaram Ramachandran, M. B., B. S., D. G. O., on her appointment as deputy minister in the ministry of education, government of India. The secretary of the Madura Medical Association is requested to communicate the congratulatary message of this association to Dr. Mrs. Soundaram Ramachandran, a distinguished member of our Branch of I. M. A.

Dr. M. V. Koreth, B. Sc., M. D., Medical Registrar, Government Erskine Hospital and Madurai Medical College, Madurai, gave an interesting lecture on 'Complications of Diabetes Mellitus and their Management'.

Nilgiris Branch:

1. The monthly meeting of the association was held at the Pasteur Institute, Coonoor on 19—5—1962 at 3 P. M. with Dr. P. V. Kurian presiding.

The president introduced Dr. Alloway of the Salvation Army Hospital, Nagercoil. He traced the history of hypnotism during the last two centuries and how it has come to be accepted in medical practice. He referred to the work of a surgeon who in the 19th century did much surgery under hypnosis. He stated that in normal child birth this was being more widely used. The method of inducing light hyponsis was also demonstrated. He answered the few questions raised by some of the members.

It was decided to hold the June meeting at the time of the conference of District Medical Officers. Dr. Thiagarajan's name was proposed by Dr. Srilal and seconded by Dr. Kurian for the post of vice-president vacated by Dr. Verghese.

2. A special meeting of the Indian Medical Association, Nilgiri District Branch was held on 3—6—1962 at the Military Hospital, Wellington, Dr. (Kumari) A. B. Marikar, Director of Medical Services, Madras presiding.

The president of the Nilgiri District Branch in welcoming Dr. Kumari Marikar referred to the problem of tuberculosis and the necessity for a mobile case finding unit in the Nilgiris.

Dr. S. Thyagarajan, Medical Officer, Government Lawley Hospital, Coonoor presented 2 cases; one was a case of intussusception and the other a case of hemi-mandibular excision for a malignant growth of the floor of the mouth.

Dr. S. T. Achar, Director, Upgraded Department of Paediatrics gave a few practical points on "Intussusception".

A recorded talk on "Jaundice" by Prof. Sheila Sherlock of Post-graduate Medical School, London lasting 30 minutes, kindly supplied by the British Council was then presented.

Dr. Marikar, in her concluding remarks, said that as domiciliary chemotherapy has been demonstrated to be almost as effective as sanatorium treatment, chemotherapy units were expected to be started in every district. She stressed the necessity of a preventive attitude in the service provided by all doctors. In the interest of the services, it was essential to carry out one's duties with cheerfulness and contentment where-ever one is posted. It was impossible, she said, to satisfy every one's demands as far as posting was concerned.

The meeting closed with a vote of thanks by Dr. Reddy (secretary) and tea.

Pudukottai branch:

The monthly meeting of the above association was held on 29—4—1962 at the Town General Hospital, Dr. C. R. Thiruvengadam presided.

The following cases were demonstrated on the occasion:

1. T. B. spine by Dr. P. H. Sundaram, M. B., B. S.
2. Cancer larynx by Dr. Govindarajan, M. B., B. S., D. L. O.
3. A case of bull-gore with complete cut of trachea by Dr. C. R. Thiruvengadam, M. B., B. S.

Ramanathapuram branch:

An ordinary meeting of the Ramnad District Branch of I. M. A. was held on Sunday the 27th May 1962 at the Sattur Hindu Nadar's Edward High School premises, Sattur. Dr. S. Raju Ayyar of Srivilliputtur presided over the function. Dr. G. A. Naidu, M. B., B. S., F. D. S. (London) Hony. Lecturer of Dermatology, Madurai Medical College, Madurai gave a very interesting and elaborate lecture on "The Recent Advances in Dermatology and Leprology".

Salem branch:

The monthly meeting of the Indian Medical Association, Salem branch was held on Sunday, the 27th May 1962 at Folke's Hall, Salem, Dr. Jayaramachandran presiding.

Dr. A. Srinivasan, M. D., Chest Physician, General Hospital, Madras addressed the members on "Recent Advances in Cardiology".

A short film on "Disorders of Intestinal Motility" by Messrs. Ciba of India Ltd., was shown.

Tiruchy branch:

1. A meeting of the association was held on Saturday, the 21st April 1962 in the premises of the Rajaji Tuberculosis Sanatorium, Cantt., Tiruchy. The following condolence resolution was moved from the chair and passed unanimously all members standing in silence for 2 minutes:

> "This meeting of the Tiruchy branch of the I. M. A. places on record the sad demise of Dr. D. V. Venkappa, L. M. P., Madras, one of the oldest members of the Indian Medical Association and requests the secretary to send a copy of the resolution to the members of his family".

Then the president introduced Dr. B. S. Viswanathan, L. M. S., T. D. D., F. C. C. P., Medical Superintendent, Ramalingam Tuberculosis Sanatorium, Perundurai to the members and requested him to give his talk on "Modern Chemotherapy in Pulmonary Tuberculosis". The lecturer gave an excellent talk and showed a number of skiagrams on the subject.

Dr. P. N. Krishnan, B. A., M. B., B, S., D. M. R., Superintendent, Rajaji Tuberculosis Sanatorium presented a case of "Aneurysm of Pulmonary Artery".

2. A monthly meeting of the association was held on Sunday, the 20th May 1962 in the association premises, Tiruchy. Dr. T. V. Ranganathan, the president presided. The president introduced the speakers of the day, Dr. P. Mohamad Iqbal, M. B., B. S., D. C. H. (Glasgow) and Dr. J. Rajasekaran, M. B., B. S., D. O., Z. O. (Vienna), to the members and requested them to give their impressions about Canada.

Dr. Iqbal addressed the members on 'The Canada I saw' and Dr. Iqbal delivered a talk on 'One year in Canada'.

The members were very much pleased to hear about Canada and put a number of questions about Canada and the speakers answered suitably.